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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.                 | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------------------|------------------|
| 10/621,561   | 07/18/2003  | Tadashi Yamaguchi    | OKI 284 C1                          | 1337             |
| 7590 08/13/2004  |             |                      |                                     |                  |
| Rabin & Berdo, P.C.<br>Suite 500<br>1101 14th Street, N.W.<br>Washington, DC 20005 |             |                      | EXAMINER<br>CLARK, JASMINE JHIHAN B |                  |
|  |             |                      | ART UNIT<br>2815                    | PAPER NUMBER     |

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/621,561             | YAMAGUCHI, TADASHI  |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Jasmine J Clark        | 2815                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 56-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 63-74, 76, 79, 80 is/are allowed.
- 6) ☒ Claim(s) 56-60 is/are rejected.
- 7) ☐ Claim(s) 61, 62, 75 and 78 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 56-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Soga et al. (US 4,970,575).

Soga teaches a semiconductor device comprising (see Fig. 5A) a semiconductor chip 1 having a plurality of electrode pads (not shown but it is inherent); a molding resin structure 11 covering, the molding resin structure having a first main surface and a second main surface opposite the first main surface; a plurality of terminals 2 formed on the first main surface of the structure 11, the terminals 2 are electrically connected to the electrode pads, respectively; and a stripe groove 21 formed on the second main surface of the structure 11, wherein the strip groove 21 divides the second main surface asymmetrically (see Figs. 5A and 5B).

Concerning claim 57, wherein the stripe groove 21 has a V shaped profile, please see Fig. 5A.

Concerning claim 58, wherein the stripe groove 21 has a U shaped profile, please see Fig. 8.

Concerning claims 59 and 60, a semiconductor device according to claim 56, further comprising an auxiliary strip groove formed on the second main surface of the

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structure, wherein the first groove (the topmost horizontal groove) and the auxiliary groove (the leftmost groove) intersect at an off-center point (also see Fig. 5B), and wherein the auxiliary stripe groove is parallel to the stripe groove, and wherein the stripe groove divides the second main surface asymmetrically, for example into 1/3, and 2/3 portions as shown (see Fig. 5B).

***Allowable Subject Matter***

2. Claims 61, 62, 75, 78 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The applied reference fails to teach and/or suggest as follows:

- wherein the terminals are arranged in a plurality of rows;
- wherein the stripe groove is formed at a position corresponding to one of the rows of the terminals;
- wherein the stripe groove has a function of indicia for recognizing an orientation of the semiconductor device; and
- wherein the stripe groove is formed over the semiconductor chip.

3. Claims 63-74, 76, 79, and 80 are allowed.

The following is an examiner's statement of reasons for allowance: the applied reference as discussed above fails to further teach including a steplike section formed on

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one of the sides of the second main surface of the structure; and further fails to teach having a first roughness on the second main surface.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

4. Applicant's arguments filed 06/30/04 have been fully considered.

Applicant argued in pages 7 and 8 that "[R]eference 21 identifies a groove....It is respectfully submitted that the sloping sides of Soga's structure. Which cooperate to form the grooves 21 between structures, cannot accurately be characterized as being formed on the second main surface of the structure...." The examiner respectfully disagrees with the applicant's arguments. Because the claim does not cite that the groove has to be directly on the top of, for example a single chip, rather, on the second main surface of the structure, and Fig. 5A clearly shows the first groove and the auxiliary groove on the second main surface of the structure. The remarks are noted, as established above, eg, the first groove and the auxiliary groove formed on the second main surface of the structure, which clearly meets the limitations in the present claims, and is simple not patentable.

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***Telephone Inquiry Contacts***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jjbc/08/11/04

**JASMINE CLARK  
PRIMARY EXAMINER**

